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is enticing. One question at least must be noticed: Has not Shakespeare sinned against the highest principle of Art—namely, self-determination—in making Portia's choice of a husband depend upon the merest accident? We answer, no; and it is most interesting to observe what care he has taken to insist upon the right of subjective choice, and with what consummate skill he has turned a purely external incident into an emblem of Free-Will. For the selection of the caskets indicates the character and end of the choosers; thus we understand the nature of their motives, and hence their respective deserts. Therefore the result of their choice is not accidental, but inherent in their character. But a full elaboration of this subject cannot now be entered upon.

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## EMPIRICAL CERTITUDE.

By JOHN C. THOMPSON.

We conceive and shall attempt to demonstrate that Berkeley's error lies in two mistaken notions; first, that the image or appearance is given in sensation; and secondly, that our minds are so constituted that we are forced to believe in a corresponding reality to the appearance;—both of which are caused by the fundamental fallacy which attributes many separate faculties to the mind, as memory, will, a reasoning power, &c. The conditions of the argument are two propositions, which may be thus expressed:

- (a) Mere consciousness is the fundamental form of all the modes of the thinking activity, and not a special mode of the activity.
- (b) Error can enter the human mind only under cover of an inferred identity.

The second above proposition is intended as a corollary to Descartes' test of certitude, namely, that we have a perfectly clear and distinct idea only of our own existence (*cogito, ergo sum*), and our certainty of any other thing is more or less reliable as it approaches the certainty of our existence.

It will not be questioned that Sensation is the first stage of experience. Sensation, in our sense of the word, is the sim-

plest complex fact, having two factors, of which one, the psychological, when detached from the other, the physical (as in memory), is knowledge; but undetached (as in sensation), it is feeling, or pure consciousness. Mind and matter, it is true, have nothing in common known to us, but it is nevertheless a psychological fact that pure consciousness (meaning the highest measure of consciousness) is only experienced in the act in which they are brought in contact (meaning the immediate cognition of a material motion). The psychological side of the sensation is then an act of consciousness. And the power to be conscious is alone the Ego, an essential activity, which would lose itself in space and remain forever unconscious were it not to encounter some resistance, in the effort to overcome which, it becomes conscious of something not self, and in the same act necessarily conscious of self.

The other factor of the sensation, which may be called the physical side or material moiety, is the mere motion of a nerve of sense. It may be that the nervous system, with all its phenomena of ganglia and sensational centres, acts as described by Bain and Spencer (and generally the school of modern physiologists), and that an image—for instance, a landscape—pictured on the retina, is communicated to consciousness, as they say; but nevertheless we know that, whether or not all its constituent parts are thus presented simultaneously, the image, as an image, is not cognized until the sensations of which it is constituted fall into their proper relations to one another. By the infant's mind, in the beginning of life, no image is cognized at all, but only the several parts of the image. In other words, until with experience Consciousness has mastered the appearance, nothing is presented but a lake of floating lines and colors in bewildering confusion. So the artist knows that the picture on his canvass he has himself constructed with countless minor strokes.

Commencing now with the first stage of experience. Assuming the Mind to be a single faculty, it is unnecessary to consider our physiological conditions further than that the act of consciousness in sensation is a mental act having a corresponding material fact, namely, the other moiety of the sensation. It is, in strictness, an act of consciousness caused by the motion of a nerve of sense; but, in common parlance,

it is the consciousness of the affection, or motion, of the nerve. To know, perceive, or be conscious, are then, in sensation at least, convertible terms. But since the mental moiety of a sensation is an act of consciousness, or one motion of a single power, while the material moiety is a motion of the attenuated nerve tissue, it follows that of a hundred such material motions happening simultaneously in the nervous system, only one becomes the material moiety of a sensation by the Power of Consciousness (Mind) being drawn thereto; while the ninety-and-nine others, unperceived, are mere tremors of nerve tissue. So that however speedily acquaintance with the nerves of sense may be acquired in the first stage of experience, that knowledge is not acquired but once, but by parts; and is, in fact, a general knowledge of the motions of the nerves of sense, composed of a particular acquaintance with the motions of each nerve, or class of nerves. We proceed now to show that the unassisted exercise of the Power of Consciousness not only results in such acquaintance with the nerves of sensation, but retains all of those particular knowledges, thoughts, or ideas.

The Mind being an essential activity, in the condition of a continued act of consciousness would be at rest; and, from that state of rest, its motion would consist in the activity, being arrested. For, to know, perceive, or be conscious, being the one motion of the Mind (an essential activity), it follows that when a thing is known, perceived, or cognized, the Mind no longer knows, perceives, or is conscious of it. To explain this seeming paradox, let us suppose A, the material moiety of the first sensation. The mental moiety of that sensation, whether we call it an idea, a perception, or an act of consciousness, we take to be in fact the act of consciousness of the greatest vivacity. Such sensation would be an affirmation of existence satisfying to the fullest extent the Cartesian axiom, *cogito, ergo sum*. We are, for the sake of argument, supposing our physiological conditions to be such that A, the psychological side of the first sensation, is a more perfect act of consciousness than that experienced in the sexual orgasm, or a draft of cold water in fever, or the inhalation of fresh air by a diver on coming to the surface. Supposing thus A, the first sensation, let us suppose a continuation of it

and we suppose it lost to consciousness. Why so? Because, prior to the idea A, the Mind was a certain entity, to wit, the unconditioned Ego; but, subsequently, it was the Mind conditioned by the idea A. Then the continuation of A awakens no consciousness, because if it could again take in the idea A it would have the same idea duplicated, which is absurdity. The perception of A was the arresting of the unconditioned activity. But when the Power cognizes A and nothing else, A is no longer known, perceived, or cognized, because the Activity has then no other motion but the idea A, and in that one motion is at rest. The form would be an essential activity and its mode the idea A.

When however we suppose the mind having the idea A, to know, perceive, or become conscious of B, the material moiety of the second sensation, we see that it has at once gained indefinitely more than the two ideas A and B. For whereas at the perceiving of A there was in consciousness no other idea, on the contrary at the perceiving of B there was already in consciousness the idea A; and as the perception of B was a change of the Ego from its then condition to the condition of knowing B, necessarily in that change is an active consciousness of both A and B. Because consciousness means the Ego's consciousness of itself, the Ego; and, being an essential activity, that involves the consciousness of its own changes of motion. It cannot change from one condition to another without being conscious that it does so; involving the consciousness of, 1st, the condition from which it changed; 2d, the act of changing; 3d, the condition to which it changed. And all but so many successive thoughts, ideas, or acts of consciousness; for the Activity being a single power, all thought is a succession of phenomena: co-existence of phenomena is impossible.

So far, then, there is certainly no other psychological factor engaged but the single faculty of Consciousness: yet the exercise of that faculty alone in the first two sensations involves an act of comparison, because it is the setting off of two contrasted ideas in the mind. But, in the supposed instance, is the knowing of B as large an act of consciousness as was the knowing of A? No. Because the knowing of A was the act of the unconditioned Power, and therefore the

purest act of consciousness, meaning of the highest vivacity. Whereas the knowing of B was the change of the Mind from its condition of A to that of B, and,

1. *In so far as there are properties in common to A and B there is no change at all.*

Motion consists not in the change effected, but in the act of changing; and here, as to the properties in common, there was no act of changing. Hence, having the idea A, the acquisition of B is the active consciousness only of those properties of B wherein it differs from A; i.e. the individuality of B. In other words, in knowing B, the hither boundary of B is at the forward extremity of the act of consciousness, while its other boundary is somewhere in A, and includes so much of A as is common to A and B. Of course the same is true of the change of the Activity from B to C, from C to D, and so on. Now the condition of the mind prior to the first idea A, and then its condition subsequent to that idea but prior to B, the second idea, are both unnatural conditions, for the reason that, in either instance, as above shown, it is the being at rest of an essential activity, the being unconscious of a sole power of consciousness. But subsequent to the perception B, if never another idea should be acquired, the Ego would forever continue changing from the one idea to the other. Of course it would pass from the one idea to the other upon some property in common to the two. And, of course also, if the two ideas have nothing in common, the Activity would forever remain unconscious (lost) in the channel in which it was left. Such property in common is the nexus, or bridge of identity, connecting the two ideas. To fall into an idea having no point of identity with another, and to fail to be recalled by sensation, would leave the Mind detached from all it knows. So death separates; and so birth starts the soul anew, with or without ideas *à priori*, as Plato or Aristotle may be in the right.

In any sensation, the act of consciousness caused by the motion of the nerve is a consciousness not of the motion of the nerve (material moiety of the sensation) but of itself, the mental moiety. And as the material moiety is a particular motion of the nerve, so the mental moiety is equally an indi-

vidual act of consciousness. They have nothing else in common. But, attenuated as is that common property, in it is involved this fundamental psychological law, viz.:

2. *Although it is true that the act of consciousness in sensation is a purely subjective fact, yet the individuality of each material moiety is correlated by a corresponding individuality of each mental moiety.*

We say, conventionally, that one thought suggests another; but that is in effect to say that every thought, act of consciousness, or idea, has its nexus of identity with some other thought; and the Ego, an essential activity, would forever thus pass from one thought to another; because change, so soon as effected, becomes rest, and motion consists in the act of changing. For example, in sensation we are conscious of the act of touching, but not of continued contact. And,

3. *Except in the stage of sensation, every psychological act supposes two ideas; the second following the first and conditioned by it.*

We can by no conception escape from that law. To do so would be to conceive an unconditioned idea, which is impossible. In sensation each psychological act is conditioned by its physical correlate, the material moiety of the sensation; while in all other stages of experience every thought is conditioned by two other thoughts, namely, its immediate antecedent and its immediate sequent.

The supposed necessity for Memory and Volition, separate mental faculties, is begotten by our experience of material force, erroneously, though almost unavoidably, applied to mental action. For, seeing every material force exhausted in the exercise, and of itself coming to an end, it is too easily suggested that the same is true of the Mind; an essential activity, to which therefore a persistent idea would be a blank. Perhaps it is easier to accept phenomena in sensation, and perception (of images), as being mere acts of consciousness, than to admit that a separate faculty, Memory, is not assured to us in the facts of consciousness. Yet the proposition will stand the test of any analysis. For, in supposing the mental moiety A, unless we suppose that idea to remain after the cessation of its corresponding material moiety, we in fact suppose the psychological side of the sensation to be also

subject to the law of material force. In other words, when A is known, as it would add nothing to that knowledge to continue the presentation of A, so it would be strange if it should take from that knowledge to cease the presentation of it. As to Volition, to elect which of the simultaneously occurring motions the mind shall perceive, that faculty is demonstrably naught; and for the plain reason that the perception must precede the choice.

Before, however, proceeding to the second stage of experience, namely, that of the perception of images, let us pause briefly to consider what general, or universal, ideas are acquired in the stage of sensation. After the first sensation the Mind, in any two thoughts, certainly experiences that idea which of all others is declared by the Platonist to be an intuition — the idea, namely, of Time. For, every thought being a single motion of the Mind, necessarily any two given thoughts, or ideas, must occur at different times. Co-existence of ideas in consciousness being impossible, it follows that the Ego is conscious of itself in its change from the one idea to the other, which is to say is conscious that the one proceeds and the other comes after. This is no more than to say that it changes, and is conscious of changing, from A to B instead of from B to A. Truths are but perceived relations; the idea of time is nothing else. We cannot conceive a Universe without Time, it is true, but only because we cannot conceive our own non-existence; for our existence is no more than a succession of phenomena strung upon the consciousness of a continuing personal individuality. And this universal and necessary idea of Time, which is no more than the self-consciousness, in every act of consciousness, that the act differs from its antecedent and its sequent, is involved in any two conceivable acts of consciousness, or thoughts.\*

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\* "The perception of Space must precede that of Time, for it is only through the former that we can reach the latter." — (*Jour. Spec. Phil.*, vol. i., No. 3, p. 177.) This general error, as we consider it, is a consequence of the general loose idea of sensation, supposing the image, if not also the conception of external reality, to be given in sensation; and which, consequently, refers the first perception of successive motions not to the consciousness of successive phenomena in the first stage (sensation), or the second (perception of images), but to the third, namely, the intelligible movements of bodies in Space.



When, therefore, it is said that experience is incapable of guaranteeing any universal and necessary idea, it is manifest that the assertion holds good only upon the assumption that the perception of images, and the reference of them to external cause, is the first stage of experience. Whereas neither the image nor the notion of externality are found in sensation at all; and those truths of universal and necessary acceptation, called sometimes ideas *à priori*, are such only to the extent that they were in the Mind prior to the conception of an external cause to the image. Having in fact been acquired in sensation, the stage of immediate apprehension, of which the first act (to wit, the idea A, the mental moiety of the first sensation) is not only antecedent to all the categories, *because antecedent to the idea of Relation*, but is, for the same reason, antecedent to all those truths of universal and necessary acceptation; except, perhaps, the idea of pleasure or pain, the originals of good and bad. Those universal and necessary truths, acquired in the first stage of experience, are Time, Individuality (including Identity), and Relation. These may, with absolute certainty, be referred to the stage of naked sensation, because the definition of consciousness (self-consciousness) assures us that they are experienced in any succession of phenomena, however early; and the facts of consciousness assure us, with a certainty equal to the certainty of our own existence, that they are still more clearly and distinctly exercised and confirmed in the second stage of experience, namely, that of the perception of images. Every mental moiety, or psychological side, of a sensation is neither more nor less than that act of pure consciousness, the realization of our own existence. And those necessary truths (their originals) are certainly acquired in that stage of experience, because the Power of Consciousness cannot change from A to B without being conscious of the change. If A and B were not individual acts, their identity would be complete, and consequently as to the second thought there would be no motion of the Ego at all, but the space of the second thought, B, would be to consciousness a blank. In what they differ, and in what they are the same, consists their Relation; the consciousness of which is included in the self-consciousness of the change from the one idea to the other. Every two phe-

nomena therefore, experienced in succession, involve an act of comparison ; and,

4. *Every act of comparison involves the general ideas Good or Bad, Time, Individuality, Identity, Relation.*

Relation is the *tertium quid* of Individuality and Identity. If there were no Identity there could be no Relation, because the Individuality of entities would be complete ; and so, if there were no Individuality there could be no Relation, because complete Identity would constitute a one-ness.

Coming now to the second stage of experience, that of the apprehension of sensuous images, it is manifest that the image is simply the perception of many simultaneous motions of an organ in their relations to one another. Take for example the visual image. That nerve (the optic) is the smaller base of a truncated cone ; upon it are converged the rays of light reflected on the eyeball. Were the rays to fall with equal force, as from a concave surface of snow, there would be no image, because of the identity of the sensations. But where the rays strike with unequal force, an image, or, in other words, natural conjunction of sensations, is the result ; because each idea, the mental moiety of a constituent sensation, has its own individuality, as well as its point of identity with its immediate antecedent and sequent. Thus it is that the picture painted by the pencils of light on the retina is the correlate of the image in consciousness, since each mental moiety of a sensation is the correlate of its material moiety. And thus, also,

5. *The image in consciousness is not a representation of the affection of the organ, but, on the contrary, the affection of the organ is a correlate of the image ;*

and in the instance of the visual image it is a picture in virtue of that fact. The colors, the harmony, the pleasure, are all affections of the soul, while the correlative affection of the organ is no more than a certain number of simultaneous motions of a nerve of sense : and which form a picture only because, being individually objects of immediate consciousness (material moieties of sensations), they *seem* to be identical with their corresponding mental moieties, which together constitute that harmonious conjunction of ideas we call an

image. The consciousness of the many simultaneous impressions on the retina was at first a particular apprehension of individuals, but with continued experience becomes an apprehension of the many in their relations to one another, i.e. each to its immediate antecedent and sequent: which apprehension is the image in consciousness, as completely an individual thought as the sensation itself, by virtue of the ever self-determining action of the Activity. (See the psychological law expressed in Rule 8.)

It is naught to say that each organ has its specific mode of being affected; for that each one of the five special senses is in fact a special sense of touch, to be admitted needs only to be suggested. The nerves of the special sense of Touch, determining to the surface of the body, which come in contact with solid foreign bodies, are moved only by the consequent compression of the flesh tissue in which they are contained. But when we consider the other four special senses, we see that they differ from the sense of Touch only as "the hand of little employment hath the daintier sense." And that while so placed in the physical system as to be not subject to the influence of contact with solid foreign bodies, they are severally subject to the influence of contact with external matter more attenuated, each answering in its own manner to its peculiar stimulus. The image, therefore, to whichsoever organ it may belong, is an infallible proposition, because it is a natural conjunction of infallible ideas; the ideas of the first category, naked sensations, each one of which is individually a mere assertion of existence; and the image asserts nothing more.

If Logic is the science of affirmation, and if Affirmation is the active exercise of the Mind, then the thoughts, or ideas, in sensation are nothing but affirmations of existence. And if Judgment is that operation of the Mind by which joining different ideas together it affirms or denies something, then,

*6. An image is but another affirmation of existence, in which there is no more possibility of mistake than in the affirmations of mere sensations, ideas of the first category.*

Now, the only thought, or idea, in which something is affirmed immediately, and not involving other ideas, is the affirmation of existence in sensation. Of those immediate

affirmations, the constituent number perceived in their proper relations (considered as sensations), or in their logical sequence (considered as ideas), is the image, another affirmation of existence. That the conjunction of ideas constituting the image cannot be expressed in words is true, but since the result, the judgment, can be designated by an arbitrary term, we violate no rule of logic in calling the image a proposition; and,

7. *It is an infallible proposition, because a proper conjunction of the infallible ideas of the first category; affirming nothing but existence, and carrying with it no inferred identity with something else.*

The facts of consciousness assure us that every idea in the first category (mental moiety of a sensation) is a totality, an individual idea. But the facts of consciousness assure us with equal positiveness that the image is a totality; and that, in fact,

8. *A consciousness of the individuality (self-determination) of phenomena is the fundamental law of thought; without which not only is no certitude possible, but no reason is possible.*

To strike it from the Mind would be the obliteration of every idea, as to smear the artist's paint while still wet upon the canvass would be the effacement of his picture. Or, perhaps, it is a better figure to say that the mind, thus without thought, would compare to the present ever self-determining action of the Activity, as ink spilled on the paper, to the same ink separated into letters, the letters into syllables, the syllables into words, the words into sentences. For, assuming the Activity to be a single faculty of consciousness, what Mill and others have designated as complex ideas, or clusters of ideas, should in figure be represented neither by surface nor by cubic, but by linear measurement.

Now, first, would such attainment of the image by the conjunction of sensations be a logical process? and secondly, is such the constitution of the image?

As to the first. After the immediate affirmation of existence in sensation, any other affirmation is the result of, and presupposes, a concatenation of ideas logically leading to the affirmation. But the image, or idea, in the second category is a concatenation of sensations (the psychological sides or

mental moieties, ideas in the first category) into a single idea; an affirmation itself of existence, and one which not merely presupposes, but in fact includes, the train of ideas on which it depends. It is, therefore, the perfection of a logical process.

Now as to the second aspect of the question: namely, admitting such to be a logical process, is the image the result of that process? That it is so, we have the assurance of consciousness. First: in the fact that while the analogy of the different genera of images is complete, only one genus, the visual, is a perception (*seriatim*, but with the infinite quickness of thought) of the simultaneous affections of the organ; while, on the contrary, the others are constituted in every instance of an appreciable succession of sensations. There are, indeed, but two other genera, namely, the tactile and the auditory. The nasal and gustatory senses present no images, their ideas belonging to the first category, that of naked sensation, always. Secondly: in the fact that while in two of the genera the image can be always thus analyzed into its constituent ideas, in all three—the visual as well as the other two—the intrusion of an idea having no point of identity with its antecedent and sequent (or so slight as to give it undue individuality) destroys the concatenation; the Mind passing at once from the milder consciousness of the second category to the more acute consciousness of the first. Such an idea, intruding or out of place, in the auditory image is a false note in music. An instance, in the visual image, is the sensation caused by an inharmonious stripe or check in a shawl or dress pattern; in the tactile image, is caused by a raised point or line while the hand is feeling a smooth surface.

Coming now to the third stage of experience, we see that necessarily the ideas of that category are constituted ideas, or judgments; the constitution of each being an harmonious conjunction of idea of the two former stages. We say necessarily so, because otherwise the nature of the Activity, as we have followed it from its condition of *tabula rasa* through the first and second stages of experience, is changed in the third. In the first and then in the second stage we have seen the Mind, from the proper nature of the Activity itself, in a mere succession of phenomena to cognize, first, ideas of naked sen-

sation individually; next, the five Universals corresponding to the five special senses, under some one of which each several sensation falls; and lastly, in the same progress of the Activity, to construct the image. Now, if it be so that the images of different genera have nothing further in common, then knowledge transcending that of experience must be postulated to enable the mind to arrive at the idea of an external cause to the image in consciousness. But if, on the contrary, any one of the general ideas, or truths, of universal and necessary acceptation, acquired in the first or second stage of experience, shall form a point of identity between two images of different genera, then the same law of consciousness which in the progress of the Activity constructed the image out of sensations, will likewise construct the ontological idea out of images.

Now, experience soon points out a connecting link of identity common to two images of different genera, and one which is the very largest possible evidence of a common cause, as we come afterwards to express it: the identity, namely, of Time. So soon as that (as an inevitable) point of identity is established in consciousness, the mere conception of two several images in that relation to one another is in itself the idea of a common cause. For any two phenomena successively experienced involve an act of comparison, and here the act of comparison finds no other nexus of the two ideas save simultaneousness of creation. Neither at that stage of experience, nor ever afterwards, have two images of different genera (the tactile and visual for example, or either or both with the auditory) any other possible identity in consciousness than the reference of them to a common cause by reason of simultaneous appearance. It is to be borne in mind that while the several simultaneous images have so little in common, yet have they nothing at all antagonistic, not being conflicting impressions on a common organ. The ideas of Distance and of Space are judgments (in the third stage of experience) constituted of images of Touch (judgments of the second stage); for not only is our body, to the Ego, an object like any other external matter, but the organic senses, such as those of the alimentary canal and of muscular activity, are in fact modes of the sense of Touch. The sensations conse-

quent on stretching forth the arm, for instance, constitute an image of that special sense, the same as do those consequent on grasping an object with the hand. So likewise of the concatenation of sensations consequent on any similar exercise of the person, or parts thereof. That the idea of Distance is a judgment, or proposition, resulting from a sufficient experience of those images, we shall not pause to argue, because, as it seems to us, one who would question it would be equally ready to question his own existence. An infant, in the act of grasping an object, is conscious of two several images, namely, the visual and the tactile. The two have the identity of Time only. An object not within his grasp presents to him the visual image alone; but then add the advantage of distance within reach, and straightway he has the other image, that of touch, again simultaneous with the visual image. The same experience, continued, not only results in the knowledge, as a Universal proposition, that, having the visual or the auditory image, or both, or a sensation of smell, the additional experience of a certain distance brings within the grasp a tactile image also; but likewise results in the knowledge, as a Universal proposition, that the visual and auditory images and the sensations of smell are cognized with more or less distinctness according to the distance of the object. And since the experience of continued distance beyond that at which the tactile image is attained, results in a loss of all the images, necessarily a sufficient experience results in the knowledge that the cause (potentiality of attainment) of the appearances is at a certain distance from us. In that is our idea of Space, which is neither more nor less than the impossibility of divesting the mind of a conception of the potentiality of Distance, in all directions from any given point. Every accident of infancy throws the sensations of smell and images of touch, of sight, and of sound, into concatenations whose results are the ideas of distance, of direction, of space. Experience of the identity of time to the several images causes the presence of one to suggest the other two, or the presence of two to suggest the third. Wherefore it is that the infant soon comes to grasp at any object he may see in obedience to that law of nature which causes the muscular system to obey thought; or turns his eye in the direction of

a voice addressed to him. But, as before observed, although the ideas of *distance*, *space*, and *direction*, are concatenations of images of *Touch*, yet the ideas of a common cause to the several images of different genera leads directly to the perception of a certain relation in the distinctness of the visual and the auditory image to the distance of the object. So that although the young infant will grasp at the moon and stars, yet with but a little additional experience he begins to measure with his eye, and to grasp only at those things within his reach. Thus a landsman, for the first time in his life on the sea shore, is ready to cast a pebble at an object far beyond his throw; and supposes the ship to be a mile off, which is really five.

Descartes, in his sixth Meditation, referring to the deceptions practised not by Nature but by our inconsiderate judgments, cites the instance that "stars, towers, and all other distant bodies, are of the same figure and size as they appear to our eyes at a distance." These and similar instances (and which Descartes rightly called inconsiderate judgments) have been, since the day of Berkeley, attempted to be accounted for thus—to borrow the words of a modern fashionable writer: "A little knowledge of optics appears to explain the difference, but does not. At fifty yards you say the tower appears round, but it really is square. At fifty yards, we reply, it *appears* round, and at one yard it appears square. It is neither. Both round and square are conceptions of the mind, not attributes of things: they have a subjective, not an objective, existence." Now, so long as the suggestion of external reality is attributed to the mere cognizance of the image, certitude is not demonstrable, because we turn our back to the experience which led to the belief, thus going down the stream in search of its fountain. The suggestion of squareness, in the given instance, is no part of the visual appearance at all. It belongs, on the contrary, to our knowledge of *Extension* (or *place in Space*), which is a judgment or idea in the third category, constituted of certain ideas of the second category—namely, images of *Touch*. But for our knowledge derived from that sense, experience to the end of time of the sense of sight, unassisted, would leave us at last with the tower appearing equally round at the distance of one yard and of fifty. But,



as we have shown, a certain appearance of tactile images having resulted in the idea of Distance, a continued experience in the knowledge of distance assures us that the visual image is cognized with greater or less distinctness according to our distance from the object. At the distance of fifty yards, and while the visual image is not distinct, it has a greater identity with the distinct image of a round tower than a square one. But, as the distance is diminished and the image becomes more distinct, its identity with the distinct image of a round tower becomes less, and with that of a square tower greater. So that when, finally, we are conscious of a distinct image, we are as conscious of the image of a square tower as of our own existence. And whereas the approach satisfies us of the squareness of the object, a return to the distance of fifty yards does not in the least cause a return to the opinion that the tower is round; because of the square image, or appearance, we have as clear and distinct an idea as we have of our own existence, but of the round appearance we have not. Not only is the idea of roundness or of squareness not given by the sense of sight, but no idea of externality at all is given in the visual image, or any other image, unassisted. That idea, as we have shown, is a judgment in the third category, and is, in effect, the logical result of a concatenation of ideas of the previous stages of experience, self-determined by the Activity into a single idea. It is, indeed, no more than the idea that the several simultaneous images are referable to a common cause. Extension is the idea obtained by natural induction (i.e. by the action of the ever self-determining Activity) from a sufficient experience of the images, or judgments, of Touch. A blind man has the idea of extension as well as one who can see; and, therefore,

9. *When we say that we see the object to be square, we can only mean that we are conscious of a visual image such as Experience assures us has its identity (common cause) with a square image of Touch.*

The author, to subserve his purpose, must seek another illustration in some instance in which the object shall, under the same conditions, present at one time a round appearance and at another a square one. That instance, we apprehend, can not be found. The distant tower never appears square; the oar dipped into water never appears straight.

From the experience of images of the sense of Touch, result the ideas of Space and Distance; as also from the same experience the idea of Extension, or place in space. The simultaneous images of the different senses having but one nexus, the identity of time, the logical induction is that their cause is in that place in space at which the image of touch is attainable. For the reason that after we have arrived at the ideas of Space, Distance, and Extension, we know that we are conscious of the image of sight, or visual image, as clearly and distinctly as we are conscious of our own existence, only when we can add to it the image of Touch; or, in other words, verify the inferred identity. But as the tactile image is only attainable by the annihilation of distance, it follows that the greatest distinctness of the visual image is only attainable by the annihilation of distance—equivalent to the attainment of the image of Extension. And when it is said that the tactile image is simultaneous with the greatest consciousness of all the images, we say in effect that the cause of extension is the cause of all the images. The cause of Extension must be where Extension is, or else we should separate cause and effect. But the meaning of Extension is place in Space. Therefore the idea of that place in Space is affirmed by each one of the several images, each confirming the testimony of the others. When, therefore, the visual appearance affirms the object to be square, what it in fact affirms is that at the distance of a yard is the cause of itself, the visual image; and that the same cause has such a place in space (Extension) as will cause a square tactile image. The knowledge that it will do so results from many simultaneous experiences of the like visual images and square tactile images. And when a sufficient experience has resulted in the knowledge that the cause of a certain visual image is also the cause of a certain tactile image, the cognizance of the visual image, in the act of informing us of its own cause, informs us also of the *potential* cause of a corresponding tactile image. In other words, when the object at the distance of one yard appears square, it is that we are conscious of a certain visual image, the cause of which, experience has taught us would prove to be also the cause of a square tactile image, were the distance annihilated and the extension of the object realized by the organs of Touch.

Here then, in the third stage of experience, is the first possibility of an error in the affirmations of Consciousness, and that error comes in

(b) *The only form in which it is possible for error to enter the human mind, namely, under cover of an inferred identity.*

The proposition is that the visual image is caused by an external object whose cause is also potentially the cause of a certain image of extension. The error comes of the failure to verify each step of the induction. But as the proposition is the simplest conceivable, being composed of but two particulars, it may always be resolved into its parts, and the induction thereupon either verified or corrected — not only with perfect rigor logically, but with the clearness and distinctness of the consciousness of our own existence. For the particulars of the proposition are images of the second category, ideas in which severally error is impossible because severally they affirm nothing but existence. So long as the image affirms nothing but itself, an act of consciousness, error is impossible: *when, however, the image seems to affirm the potential cause of another than itself*, then it does not affirm with the same confidence as it affirms itself: for the reason that it is then no longer an individual affirmation, but is one of the parts of a proposition in the third category, which proposition it is that affirms the oar dipped into water to be broken, the distant tower to be round.

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## ON THE DIALECTIC METHOD.

(E. V. HARTMANN'S Reply, in the *Philosophische Monatshefte*, to the Criticism of his Essay "*On the Dialectic Method*," by Prof. MICHELET.)

Translated from the German by LOUIS SOLDAN.

If the anatomical knife pierces the vital nerve of any being, we must not be astonished at the appearance of spasmodic convulsions; their non-appearance, on the contrary, would be an indication of a failure to hit the right point. In this way it can be but flattering for my essay that it called forth a violent effusion of wrath from Professor Michelet as the